

REMARKS

Claims 1-2 and 7-21 are currently pending in the instant application. Claim 20 has been amended merely to addresses formal (non-substantive amendments). Support for the amendments appears in the specification and claims as originally filed. No new matter has been added by virtue of the amendments.

Claims 1, 2, and 7-21 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. It is alleged that there is no support for the ranges of photoacid generator of 5.0-15.0 wt% and 5.0-12.0 wt%, recited in claims 1 and 8.

Applicants disagree and respectfully traverse.

The preferred ranges of the photoacid generators of the instant invention are provided as being at least 5 weight percent, or more typically at least about 6, 7, 8, 9, 10, 11, 12, 13, 14, or 15 weight percent, based on the total solids of a resist composition (page 14, lines 4-6). The rejection is thus obviated and Applicants respectfully request its withdrawal.

Claim 20 was rejected under 35 U.S.C. 112, second paragraph as allegedly failing to particularly point out and distinctly claim the subject matter which Applicants regards as the invention.

Applicants have amended claim 20, thus obviating the rejection. Withdrawal of the rejection is therefore requested.

Claims 1, 7, 8, 11-15, and 19-21 were rejected under 35 U.S.C. 102(e) over Jung et al. (U.S. Patent 6,391,518). As the rejection is understood, the Office Action alleges that Jung teaches a photoresist composition containing a polymer, a photoacid generator (10 wt%), and

exposure to ArF radiation (alternatively EUV radiation).

Applicants disagree and respectfully traverse.

Jung provides no exemplification of a method for forming a photoresist relief image that meets the criteria of Applicants' claim 1. That is, Jung provides no examples of a photoresist composition on a substrate that is exposed to EUV radiation. While Jung equates ArF laser with a laundry list of other types of radiation, Jung does not provide sufficient enablement for other types of radiation besides ArF. Examples 15-25 were all prepared using the ArF laser, and therefore no exemplification of other sources of radiation are provided. Applicants respectfully request withdrawal of this rejection.

Claims 1, 2, 7, 8, and 11-20 were rejected under 35 U.S.C. 102(e) over Chen et al. (U.S. Patent 6,013,447). As the rejection is understood, it is alleged that Chen teaches a positive tone chemically amplified resist system for use in EUV lithography comprising a polymer resin composition, an acid generator, and a solvent, wherein the acid generator is present in an amount of 5-15% by weight, and then the resist system is used for EUV lithography.

Applicants disagree and respectfully traverse.

As stated in MPEP 706.02, "for anticipation under 35 U.S.C. 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly." As the reference is understood, Chen provides examples of synthesizing photoresists comprising a polymer resin, acid generator, and solvent, but provides no exemplification of a method of forming photoresists that meets every element of the instant claim 1 method. That is, while Chen provides examples of forming photoresists, the provided examples utilize acid generators of 4% by weight by less, which is outside the range of 5%-15% by weight recited in Applicants' claim 1. Additionally, the Chen examples provide no exemplification of EUV radiation in the method of forming

photoresists, as recited in the instant claim 1. Therefore, the Chen examples do not anticipate the instant claims. Thus, Applicants respectfully request withdrawal of this rejection.

Claims 9 and 10 were rejected under 35 U.S.C. 103(a) over Jung et al. (U.S. Patent 6,391,518). As the rejection is understood, it is alleged that since Jung uses 10 wt% of a photoacid generator, it would be obvious to one of ordinary skill in the art to use the amounts of photoacid generator recited in claims 9 and 10 of the instant application.

Claims 9 and 10 were rejected under 35 U.S.C. 103(a) over Chen et al. (U.S. Patent 6,103,447). As the rejection is understood, it is alleged that since Chen uses 10 wt% of a photoacid generator. The position is then taken that it would be obvious to one of ordinary skill in the art to use the amounts of photoacid generator recited in claims 9 and 10 of the instant application.

Applicants disagree with the 35 U.S.C. 103(a) rejections over Jung and Chen, and respectfully traverse.

Applicants aver that those of ordinary skill in the art are not aware of using photoacid generator in high concentrations. It is noted on page three, lines 6-10 of the specification as filed that notably enhanced resolution of a resist image using EUV, is surprising with increased levels of photoacid generator compounds. Additionally, the use of high photoacid generator concentrations in accordance with the present invention is counterintuitive to conventional practice and provides clearly unexpected results (page three, lines 24-26). Therefore, the use of increased concentrations of photoacid generator is not obvious to those of ordinary skill in the art, and Applicants respectfully request withdrawal of the rejections.

Claims 1, 2, 7, 8, 11-18, 20, and 21 were rejected under 35 U.S.C. 103(a) over Barclay et al. (U.S. Patent 6,492,086). Barclay is cited for its teaching of a photoresist composition

comprising a polymer resin and a camphorsulfonate in the amount of 4.72 wt%, which is exposed with a KrF laser. Because Barclay lists EUV as a source of radiation, and because 4.72% of the photoacid generator is close to the lower limit of 5.0% of the instant claim 1, the position is taken that it would have been obvious to one of ordinary skill in the art to use EUV radiation so that the photoresist relief image would have the same properties.

Applicants disagree with the rejection over Barclay and respectfully traverse.

The disclosure provided in the Barclay document is insufficient to sustain the rejection. For instance, it is well-known that to establish a *prima facie* case of obviousness, three basic criteria must be met: (1) there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference(s) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143.

There is no suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the cited reference to arrive at the claimed invention, nor is there a reasonable expectation of success.

Moreover, Applicants submit that those of ordinary skill in the art are not aware of using photoacid generator in high concentrations. It is noted on page three, lines 6-10 of the specification as filed that notably enhanced resolution of a resist image using EUV, is surprising with increased levels of photoacid generator compounds. Additionally, the use of high photoacid generator concentrations in accordance with the present invention is counterintuitive to conventional practice and provides clearly unexpected results (page three, lines 24-26).

Therefore, the use of increased concentrations of photoacid generator would not have been obvious to one of ordinary skill in the art.

Attention also is directed to the earlier filed Rule 132 Declaration of co-inventor Robert Brainard which includes comparative data showing superior performance of the photoresist compounds of the invention. Such a showing further rebuts any *prima facie* case of obviousness that may be contended.

In view thereof, reconsideration and withdrawal of each of the rejections are requested.

It is believed that the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,



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